Microzine®

The Learning Library on Disk

37

The Race for Independence•*Reading/Social Studies*

Nutrition Explorer•*Science/Health*

Math Mall•*Fractions/Decimals*

Case of the Cutting Caper•*Problem Solving/Visual Discrimination*

Apple® II Plus, IIe, IIc, IIc Plus, or IIGS; 128K; disk drive; printer optional

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Ages 9 and up

Microzine is the learning library on disk.

Every issue contains four challenging programs to help students master basic subject matter skills and learn key curriculum concepts while they enjoy themselves on the computer. It's like taking part in a variety show that spins yarns, makes music, tickles your imagination, and challenges you to think, read, write, and reason. Each issue includes a science simulation, a math feature, a problem solving and visual discrimination program, and a Twistaplot interactive reading adventure based on a social studies theme.

Microzine Awards

1984 Best Software of the Year • *Classroom Computer Learning & Learning Magazine*
1985 Critics' Choice Award • *Family Computing*
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ISB
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Microzine 37's
Command Card for
"THE RACE FOR INDEPENDENCE"

Type these commands when playing "The Race for Independence."

GIVE: Give someone an item you have in your saddlebag. For example, type **GIVE LEATHER**.

BUY: Buy an object that someone offers. For example, type **BUY LEATHER**.

ASK: Ask a patriot if the missing delegate is in the colony you are visiting.

BAG: See what is in your saddlebag.

LOG: Search the History Log.

$: See how much money you have.

ESC: Leave a colony.

HELP or **?**: Read these instructions.

ISBN: 0-590-84645-0

Microzine® No. 37

Apple® 128K

DISK 1 **Side 1:** *Microzine* Guide
Side 2: Math Mall

The Case of the Cutting Caper

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Microzine® No. 37 Apple® 128K

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Side 2: Nutrition Explorer

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City, State, Zip _____

Title of Product Purchased _____

Date Purchased _____

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6 7 8 9 10 11 12 13 14 15 16 17 18 Adult

Computer Version: [ ] Apple [ ] MS-DOS

Disk Format: [ ] 5.25" [ ] 3.5"

1. How did you learn about this product?
[ ] Scholastic Software Catalog
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School Type: [ ] Public [ ] Private
Student Enrollment: [ ] 1-299 [ ] 300-499 [ ] 500+

4. Approximate number of the following computers in your school:

____Apple II Series _____IBM/MS-DOS _____Macintosh

5. Memory most available: [ ] 48K [ ] 64K [ ] 128K [ ] 256K [ ] 512K [ ] 1MB

6. Disk drive configuration most available:
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[ ] Network
[ ] Two 3.5"
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[ ] Computer Lab [ ] Home [ ] Office
[ ] Other (Specify):_____

9. How is the product primarily used?

[ ] Basic Instruction [ ] Enrichment [ ] Remediation [ ] Tool

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04- Computer Coordinator
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06- Purchasing Agent
07- Other (Specify):_____

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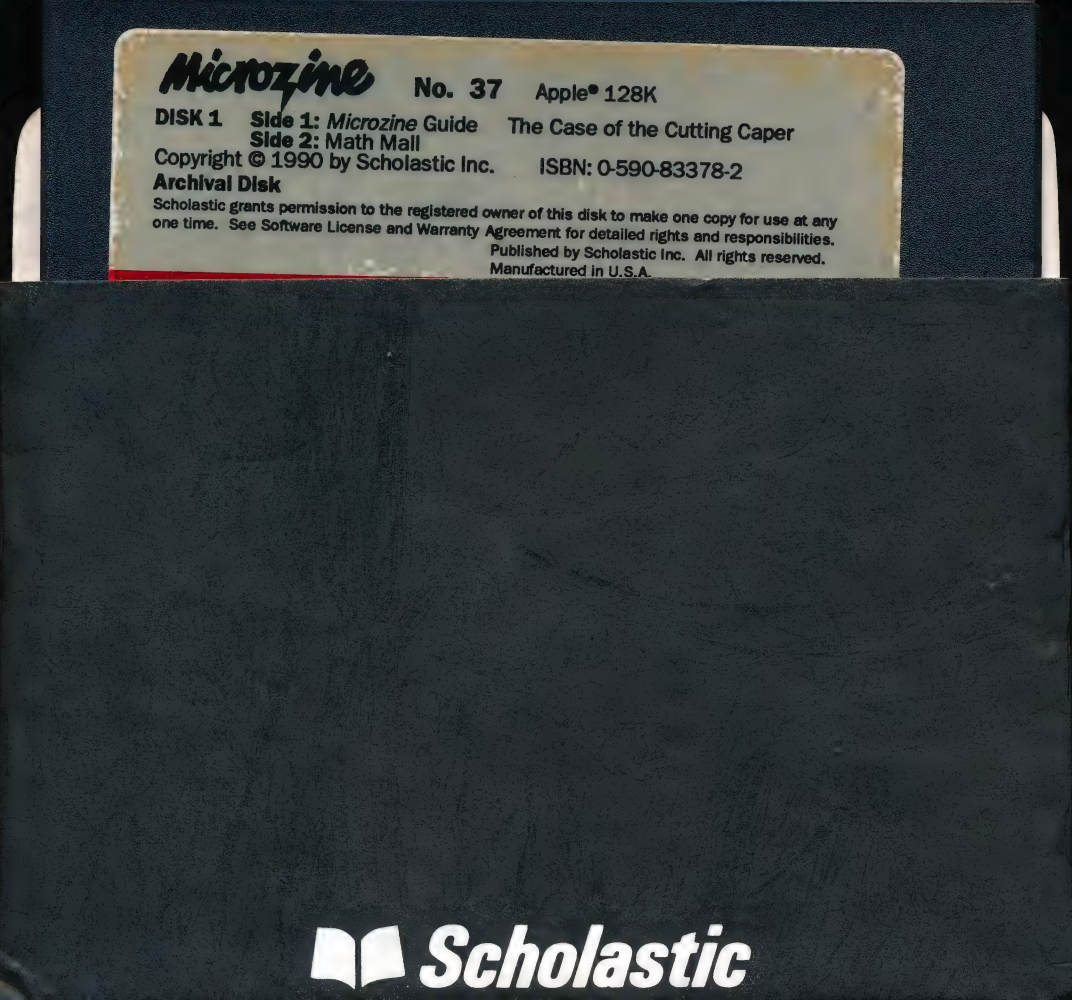
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Side 2: Math Mall
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How To Care for Your Floppy Disk

DO
keep your disk in the protective sleeve when it's not in use.

DON'T
touch the exposed parts of your disk.

DO
insert your disk into the disk drive carefully.

DON'T
bend or fold your disk. Handle it with care.

DO
keep your disk at moderate temperatures.

DON'T
put your disk near any magnetic fields.

ISBN: 0-590-94903-9

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Microzine® No. 37 Apple® 128K

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Side 2: Nutrition Explorer

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No
No
Non
Nicht
注意

Insert carefully
Insertar con cuidado
Inserer avec soin
Vorsichtig Einführen
挿入注意

Never touch!
Nunca toque!
Jamais toucher!
Nie Berühren!
絶対禁止

10°C → 52°C
50°F → 125°F

Never
Nunca
Jamais
Nie
絶対禁止

Microzine®

Student Handbook and Teacher's Guide

37

The Race for Independence • *Reading/Social Studies*
Nutrition Explorer • *Science/Health*
Math Mall • *Fractions/Decimals*
Case of the Cutting Caper • *Problem Solving/Visual Discrimination*

SCHOLASTIC

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CONTENTS

STUDENT HANDBOOK

Letter from the Editor ____ 4
Getting Started ____ 5
- Equipment You Need ____ 5
- Making Legal Copies of *Microzine* ____ 5
- Loading the Apple Version of *Microzine* ____ 7
- Loading the MS-DOS Version of *Microzine* ____ 8
- The *Microzine* Guide ____ 9
- Troubleshooter ____ 10

The Race for Independence: A Social Studies Twistaplot™ Adventure ____ 11
Nutrition Explorer: A Science/Health Simulation ____ 13
Math Mall: A Math Feature ____ 17
The Case of the Cutting Caper: A Monitor Mystery ____ 21
Computer Stuff: A Utility ____ 24

TEACHER'S GUIDE

Scope and Sequence Chart ____ 26
"The Race for Independence" Lesson Plans ____ 27
"Nutrition Explorer" Lesson Plans ____ 33
"Math Mall" Lesson Plans ____ 38
"The Case of the Cutting Caper" Lesson Plans ____ 42

Letter From the Editor

Dear Educator,

Welcome to a new year of *Microzine*! We've made some changes this year that offer you new options in the ways you use *Microzine* with your students. We've changed to accommodate what's going on in your classroom by giving you curriculum-based software that can be used in a multitude of classroom settings.

Microzine fits directly into several curriculum areas. In each issue you'll find a **social studies** Twistaplot, a **science** simulation, a **math** feature, and a **visual discrimination** and **problem-solving** program. As you've come to expect from *Microzine*, all of these programs are designed to challenge and enhance students' critical thinking skills.

Microzine is now designed to be used in many different classroom settings.

We've expanded the Teacher's Guide section of this handbook to include detailed lesson plans, complete with teacher tips and black line masters, that you can use with your whole class.

Microzine still motivates and challenges individual students or small groups. With little or no intervention from you, students can use *Microzine* by themselves (and learn to think critically!).

You'll also find that the programs in *Microzine* are easily adaptable for students with special needs, and for talented and gifted students. Read the lesson plans, especially the teacher tips, for ideas on customizing the lessons for your students' needs.

We've heard you in the past. We'd appreciate hearing from you in the future. What do you think of our new direction?

Sincerely,

Lisa Mandel

Lisa Mandel
Project Editor

Getting Started

Equipment You Need

Apple Computers

1. Monitor or TV
2. 128K Apple II Plus, //e, IIc, IIc Plus, or IIGS
3. Disk drive

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MS-DOS Computers

1. Monitor or TV
2. 256K IBM with a color graphics adapter (CGA), Tandy 1000, or any 100% compatible
3. Disk drive
4. Disk Operating System (DOS), version 2.0 or higher

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Loading the Apple Version of *Microzine*

1. Open the disk drive door.
2. Hold the disk with the label end facing you.
3. If you have a 3.5-inch disk, insert the disk slowly with the label facing up. If you have a 5.25-inch disk and the program you want is on Side 1 of the disk, insert the disk slowly with the label facing up. If the program you want is on Side 2 of the disk, insert the disk slowly with the label facing down.
4. Close the drive door.
5. Turn on the computer and monitor (or TV).

NOTE: Never remove or insert a disk while the disk drive's red light is on.

Loading the MS-DOS Version of *Microzine*

You must load DOS into your computer before you can load *Microzine*.

1. If you have a hard drive, turn on the computer.

   If you have DOS on a 5.25-inch disk or on a 3.5-inch disk, open the disk drive door and insert the disk. Turn on the computer.

2. You will see a DOS prompt. The prompt will be a letter followed by a greater-than sign (for example, A>). The letter of the prompt corresponds with the disk drive.

3. If you want to load *Microzine* in the disk drive that corresponds with the letter of the prompt (for example, if the DOS prompt is A> and you want to load *Microzine* into drive A), put the *Microzine* disk in that drive.

If you want to load *Microzine* in a drive that is different from the drive indicated by the DOS prompt (for example, the prompt is A> and you want to load *Microzine* in drive B), type the letter of the drive and a colon, then press Enter (for example, **B:**, then Enter). You will see a new DOS prompt (for example, B>). Put the *Microzine* disk in that drive.

Loading the Programs

Choose a program you want to load. Find the disk with that program's name on the label. Type these commands to load the *Microzine* programs:

***MICROZINE* GUIDE:** Type **MZ** and then press Enter.

NOTE: You may also load the other* Microzine *programs from within the* Microzine *Guide. Choose Programs and then choose the* Microzine *program you want to load. Choose the option Start the Program and then press Enter.

THE RACE FOR INDEPENDENCE: Type **TRFI** and then press Enter.

NUTRITION EXPLORER: Type **NE** and then press Enter.

MATH MALL: Type **MM** and then press Enter.

THE CASE OF THE CUTTING CAPER: Type **TCOTCC** and then press Enter.

NOTE: In each issue of* Microzine*, you may load any program by typing the initials of the program name at the DOS prompt.

The *Microzine* Guide

There are six features in the *Microzine* Guide. They are Programs, Computer Stuff, Credits, Letters, Hand Tutorial, and Exit. The features are listed in a collection of boxes on the screen. Each box is labeled.

Use the Hand icon to point to the box that describes what you want to do. For example, to read the Credits, use the Hand to point to the box labeled Credits, and then press Return or Enter.

Programs

Use the Hand to point to Programs on the *Microzine* Guide, and then press Return or Enter, to read a description of the programs in this issue of *Microzine* or to load a program from this issue of *Microzine*.

Computer Stuff

Use the Hand to point to Computer Stuff on the *Microzine* Guide, and then press Return or Enter to see a list of the functions in Computer Stuff. See "Computer Stuff," page 24.

Credits

Use the Hand to point to Credits on the *Microzine* Guide, and then press Return or Enter, to see the credits for this issue of *Microzine*.

Letters
Use the Hand to point to Letters on the *Microzine* Guide, and then press Return or Enter, to read letters from the *Microzine* Editor and *Microzine* readers.

Hand Tutorial
Use the Hand to point to Hand Tutorial on the Table of Contents, or type **?**, and then press Return or Enter to learn how to use the *Microzine* Hand.

Exit
Use the Hand to point to "Exit" on the *Microzine* Guide, and then press Return or Enter, to quit using *Microzine*.

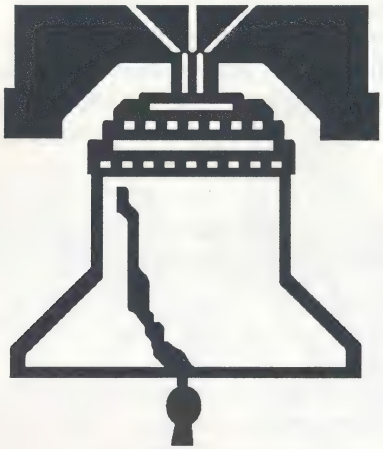
Troubleshooter
We have included this section in the *Microzine* handbook to help you if you run into problems using *Microzine*. Each *Microzine* program is documented in the handbook, and specific hints for using the program are included there; however, we occasionally receive calls about more general problems:

Loading *Microzine*
If *Microzine* does not appear on the screen, turn off the computer. Then turn it back on and try again. Make sure the disk drive door is closed, and check to see that the disk drive is hooked up correctly.

Apple IIc Plus
Microzine programs run most effectively when the Apple IIc Plus is running is slow mode, rather than fast mode. Put the *Microzine* disk in the drive. Hold down the Open Apple key, the Control key, the Reset key and the Esc key simultaneously, then release all four keys. The computer will reboot the *Microzine* program in slow mode.

THE RACE FOR INDEPENDENCE

A Social Studies Twistaplot™ Adventure



It's the summer of 1776. Delegates from the 13 colonies are meeting at the State House in Philadelphia, Pennsylvania for the Second Continental Congress. They've decided to vote on whether or not the colonies should form their own country, independent of England. Wait! One of the delegates is missing! John Hancock calls on you to find him. Get on your horse and race through the 13 colonies, find the missing delegate, and bring him back to Philadelphia in time for the vote for independence.

What You Will Find

You'll meet colonists, buy handmade crafts and other goods, and give gifts as you gather information about the missing delegate's whereabouts. All the while, you'll have to be careful to avoid the Tories, people loyal to England and against the move toward independence.

Riding Your Horse

Use the Arrow keys to ride your horse from colony to colony.

Entering a Colony

To enter any colony, ride your horse icon over the colony's label, which is located on the colony you want to visit. Then press Return or Enter.

The History Log

The History Log contains information about each of the 13 colonies. While playing this Twistaplot, you will learn facts about the colonies or be given clues by other patriots. Use the History Log to see how these facts and clues can help you find the missing delegate.

Four Versions

There are four versions of "The Race for Independence." In each version, a different delegate is missing from the Second Continental Congress.

Password

If you want to stop reading the story and continue "The Race for Independence" another time, press Esc. The Program will ask you to type a password. Write it down! Then, when you play "The Race for Independence" again, you may enter your password and continue your adventure from where you left off.

Helpful Hints:

Here are a few hints to help you find the delegate and bring him back to Philadelphia in time for the vote on Independence:

- To find a useful clue on the delegate's whereabouts, visit his home colony first.
- Don't ask a colonist if the delegate is with him or her unless you're sure he's there. If you do ask, and the delegate isn't there, Tories might overhear your question and take all of the goods in your saddlebag.
- Write down all the interesting clues and facts that the colonists tell you. You never know when someone will ask you a question!
- Don't buy an item unless you're sure you need it. If you run out of money, you'll have to gallop all the way back to Philadelphia to get more.

NUTRITION EXPLORER

A Science/Health Simulation

What You Will Find

How healthy is your diet? With "Nutrition Explorer," you will find out. You will create meals by choosing foods from different categories. "Nutrition Explorer" automatically compares the fractions of carbohydrates, protein, and fat in your meal with the fractions recommended by nutrition experts for a balanced diet.

Printer Setup

You need to tell "Nutrition Explorer" about your computer setup. If you have an Apple computer, the program will display a menu of options for printing. They are Printer, Interface Card, Location, and Line Feed.

Use the Arrow keys (↑ and ↓) to choose the printer option you want to change, and press Return. Press (←) when you are done.

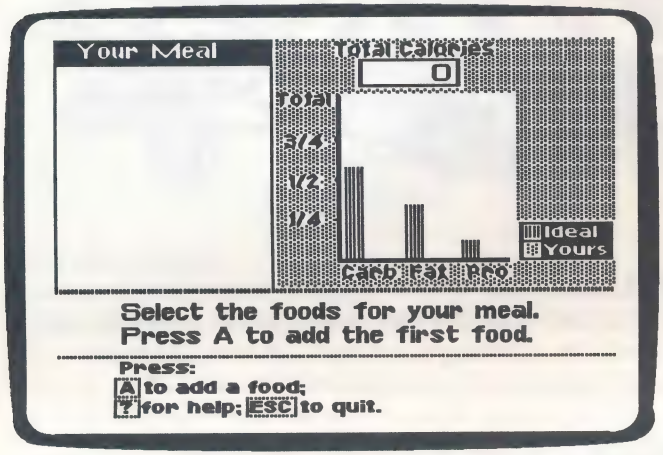
NOTE: If you have an MS-DOS computer, you don't have to tell "Nutrition Explorer" any special information about your computer setup.

"Nutrition Explorer" MAIN MENU

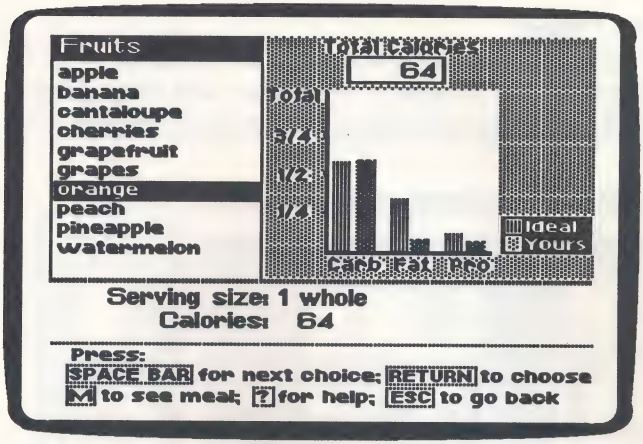
"Nutrition Explorer" has two functions, or things you may do. They are MAKE A MEAL and INSTRUCTIONS.

MAKE A MEAL

Choose this function to make a meal. You will see a space for your meal and a bar graph.



Type **A** to add a food to your meal. You will see a list of food groups and categories, and a bar graph. Use the Space Bar to move the highlight bar over the food group or category from which you want to choose a food, and press Return or Enter. You will see the foods in the food group or category you chose.



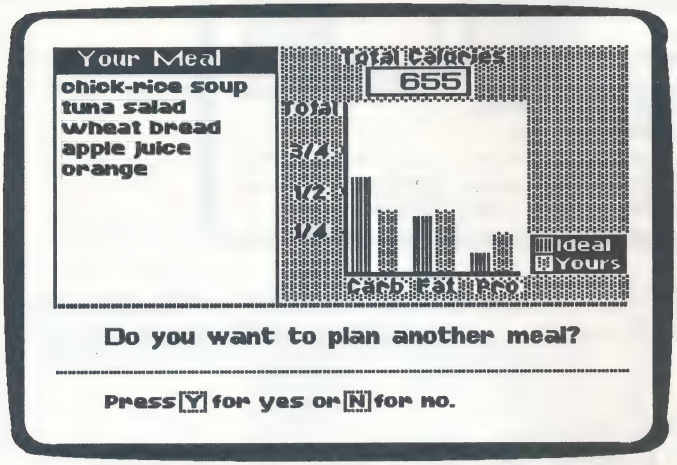
Use the Space Bar to choose the food you want to add to your meal and press Return or Enter. Continue adding foods until your meal is complete.

Printing Your Meal

You may print a copy of your finished meal. When you finish adding foods to your meal "Nutrition Explorer" will ask, "Do you want to print your meal?" Type **Y** to print your meal, and **N** not to print your meal.

Evaluating Your Meal

When you finish adding foods to your meal, you will see a list of the foods you've selected on the left side of the screen, and a bar graph showing the fraction of various nutrients in your meal on the right side of the screen.



"Nutrition Explorer" calculates the total number of calories in your meal. This number appears at the top of the screen.

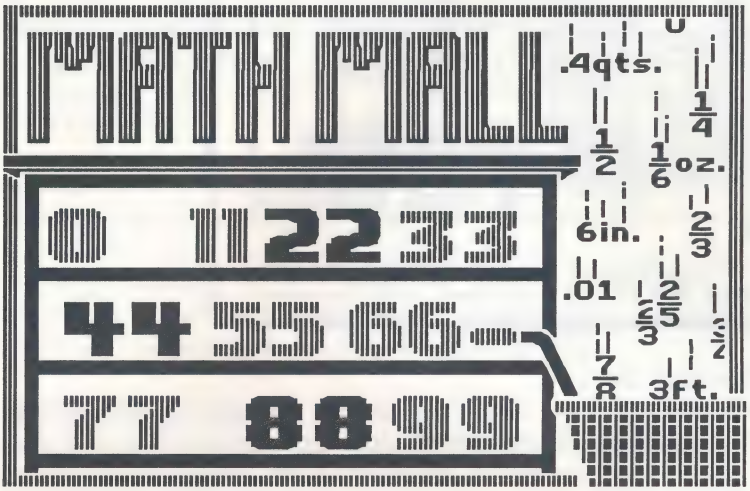
There are six bars on the bar graph: two for fat, two for protein, and two for carbohydrates.

The bars labeled "Yours" tell you what fraction of the total calories in your meal comes from fat, protein, and carbohydrates. The bars labeled "Ideal" tell you what fraction of the total calories in your meal should come from carbohydrates, fat, and protein to make it a perfectly balanced meal.

Look at the bars that represent your meal. Are any higher than the ideal? Are any lower? If you put together a balanced meal, your bars will be close to or the same height as the ideal bars.

MATH MALL

A Math Feature



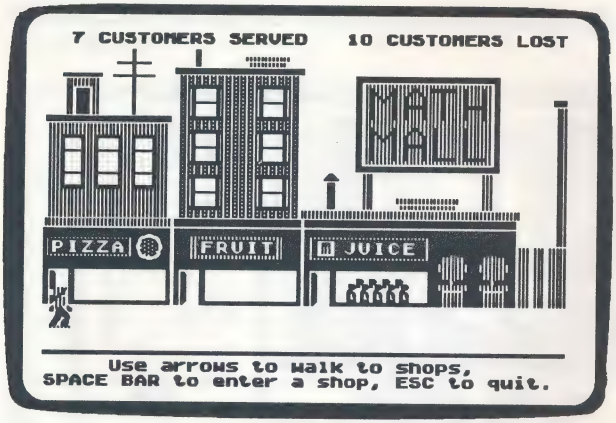
What You Will Find

You will work at a mall where customers shop for pizza, fruit, and juice. Instead of asking for 2 slices of pizza, customers will order .25 of a pizza pie. If they want 2 pears and 6 apples, they'll order 8 fruits, 1/4 of them pears and 3/4 of them apples. And, if they want a large glass of orange juice, they'll order 5/12 of a quart of juice. You will have to use fractions and decimals to fill customers' orders.

How the Game Works

You are in charge of all the shops in the Math Mall. Since you're the only salesperson, you will have to serve as many customers as you can in each shop.

There are three shops in the Math Mall. You may enter Prunella's Pizza Shop, Fritz's Fruit Shop, or Junior's Juice Shop.



Customers Served

At the top left corner of the screen you will see how many customers you have served in the Math Mall.

Customers Lost

At the top right corner of the screen you will see how many customers left the Math Mall since the game began.

Moving in the Math Mall

Use the Arrow keys (← and →) to walk between the shops.

Entering a Shop

To enter a shop in the Math Mall, walk to the shop door and press Space Bar.

When you enter a shop for the first time, you will have two options. You may press **S** to start working or you may press **I** to read the instructions.

Press I to Read Instructions

Press **I** the first time you enter each shop. Read the on-screen instructions to learn how to fill customers' orders in that shop. Remember, each shop works differently.

Press S to Start Working

Fill each customer's order as quickly as you can.

Warning Messages

As you are working, customers will enter and leave the shops in the mall. If crowds begin to gather in a shop, warning messages will appear on the screen and interrupt your sale. For example, when there are eight customers waiting at Fritz's Fruit Shop, you will see the message, "CROWD ALERT: There are 8 customers waiting at Fritz's Fruit Shop."

You may either go to the shop the warning message tells you about, or continue working where you are.

Exiting a Shop

Press Esc to leave the shop in which you are working. The Math Mall screen will reappear and you may visit another shop.

Ending the Game

Customers will leave the Math Mall if the shop they are waiting in becomes overcrowded. When the tenth customer enters a shop, all the customers in line will leave.

No matter how fast you work, some shops will eventually become overcrowded and you will lose customers. But, don't worry. New customers will enter the mall. With so many customers to serve, there will always be someone else who will need your help.

The game is over when 50 customers leave the Math Mall. The program will tell you how many customers you served in each shop.

Tips on Playing Math Mall:

- Enter the most crowded shops first.
- If more than one shop has eight or more customers in line, enter the shop nearest you first. This way, you will save time walking around the mall. Every second counts!
- Serve at least a few of the customers in each shop. Remember, the first customers in each shop are the easiest ones to serve. Even if you only serve three customers, you will delay overcrowding. This will give you more time to work in the other shops.
- No new customers can enter a shop while you are working there. You can take all the time you need to serve all the customers on line.

THE CASE OF THE CUTTING CAPER

A Monitor Mystery

We at the *Microzine* Mystery Society used our powers of observation and logic to deduce that you would be playing the Monitor Mystery today. Last night one of our agents secretly turned your everyday computer into a Sherlock 221B Mystery-Solving Computer! Can you and your computer work together to figure out just what went wrong in "The Case of the Cutting Caper"?

What You Will Find

You will read a Story, look at a Picture, and then answer Questions to solve "The Case of the Cutting Caper."

Monitor Mystery MAIN MENU

Monitor Mystery has two functions or things you may do. They are INSTRUCTIONS, and "THE CASE OF THE CUTTING CAPER."

Choose INSTRUCTIONS to learn how to solve "The Case of the Cutting Caper."

Choose "THE CASE OF THE CUTTING CAPER" to solve the mystery. The mystery is divided into three parts: the Story, the Picture, and the Questions.

The Story

Type **S** to read the Story.

Read the Story to learn the facts you will need to answer the Questions.

The Picture

Type **P** to see the Picture.

Study the Picture and search for clues. A magnifying glass will appear. Use the Arrow keys to move the magnifying glass over every object in the picture, and then press Return or Enter. Clues will appear at the bottom of the screen.

The Questions

Type **Q** to answer the Questions.

Answer the Questions to solve "The Case of the Cutting Caper." Your 221B computer will tell you if all your answers are correct.

If one or more of your answers is wrong, your 221B computer will ask you to type in the number of the answer you want to change. When all your answers are correct, your 221B computer will ask you one final question.

Final Question

Answer the final question to solve the mystery. If your answer is wrong, your 221B computer will ask you if you want to try to answer the final question again. Type **Y** for yes and **N** for no.

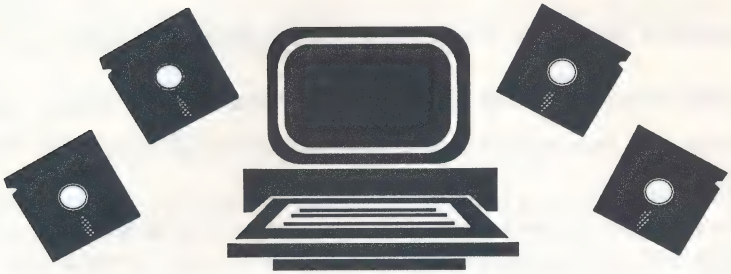
When you answer the final question correctly, your 221B computer will ask if you want to compare your deductions with its own. Type **Y** for yes and **N** for no.

Microzine Mystery Society Mystery-Solving Tips

- A smart sleuth reads the Story carefully to learn all the facts.
- An inventive investigator checks each object in the Picture for clues.
- If the 221B computer says that at least one answer is wrong, a daring detective carefully re-examines each answer to make sure an "obviously" right answer is not, in fact, dead wrong!
- After answering the final question correctly, a magnificent mystery solver always compares deductions with the 221B computer to see how logical minds think alike.

COMPUTER STUFF

A Utility



What You Will Find

Choose Computer Stuff on the *Microzine* Guide to initialize a data disk.

A data disk is a blank disk (or one that you don't mind erasing) that has been initialized, or formatted. Initializing a disk gets it ready to save your data for *Microzine*.

Apple: To initialize a data disk, use the Hand to choose Initialize a Disk and then press Return. Follow the on-screen instructions.

The program will initialize the disk, then the Computer Stuff list of functions will appear. You now have a data disk. You may use it for any *Microzine* feature that requires a data disk.

MS-DOS: Use any MS-DOS format utility to format or initialize a disk.

Note: Issues 1-26 of* Microzine *require a DOS 3.3 data disk. Beginning with issue 27, each issue of* Microzine *that requires a data disk will require a ProDOS data disk for Apple computers or an MS-DOS data disk for MS-DOS computers.

MICROZINE SCOPE & SEQUENCE CHART

CRITICAL THINKING SKILLS	THE RACE FOR INDEPENDENCE	NUTRITION EXPLORER	MATH MALL	THE CASE OF THE CUTTING CAPER
Comparing/Classifying		•	•	
Sequencing	•			
Analyzing	•	•	•	•
Inferring	•			•
CURRICULUM AREAS				
Reading/Language Arts	•			•
Math/Problem Solving			•	
Science		•		
Social Studies	•			
INFORMATION PROCESSING SKILLS				
Word Processing/Publishing		•		
Database/Research	•	•		
Maps/Charts/Graphs	•	•		
Visual Discrimination				•

THE RACE FOR INDEPENDENCE

A Social Studies Twistaplot™ Adventure

Role Playing for Critical Reading and Thinking

DIFFICULTY LEVEL: **Challenging**, Average, Easy

VOCABULARY PREVIEW: colony, congress, crest, declare, delegate, independence, patriot, silversmith, Tory

LESSON: Twistaplot Roles

LEARNING OBJECTIVE: Students will be able to apply critical reading and problem-solving strategies as they work in a collaborative learning environment.

Synopsis:

In "The Race for Independence," it is July 1776, and you (the student) are at the Second Continental Congress in Philadelphia, Pennsylvania. The delegates are about to take the critical vote to decide whether or not the colonies should declare independence from England when John Hancock realizes that one of the delegates is missing. Because you're a loyal patriot, Hancock calls upon you to search the colonies for the missing delegate and bring him to the State House in Philadelphia. To accomplish this goal, you'll have to travel through the colonies (using a map), buy items that you may barter for useful information, and search a "history log" data base to analyze the information.

Lesson 1: Use With Students While Playing "The Race for Independence"

Teacher Instructions:
To successfully complete a Twistaplot, students must read carefully for detail, determine which facts are important, take notes, analyze those notes, make inferences based on the information they have gathered, continually remind themselves of their goal, and develop a clear strategy for reaching that goal. These tasks can seem overwhelming to one student. However, when they work as a team, with each team member taking primary responsibility for an individual task, students can successfully complete the Twistaplot.

In the role-playing activity that follows, each student in the team will be assigned a role that serves a specific problem-solving function.

Before beginning the Twistaplot, divide students into teams of five. In each team, assign the following roles: Location Manager, Note Taker, Method Manager, Progress Monitor, and Financial Advisor. Using the role descriptions provided below, explain the responsibilities of each role. Reproduce or write the role descriptions on the blackboard and encourage students to refer to them often as they work through the Twistaplot.

Let the teams discuss the roles and be sure each student understands what his or her responsibilities are. Students should assume these roles while playing "The Race for Independence." Although their primary responsibility will be to perform the duties assigned to their roles, students should also participate in the tasks assigned to others. For example, a Note Taker should be encouraged to consider what problem-solving methods might be effective for the team's progress even though they are the responsibility of the Method Manager.

LOCATION MANAGER: This student will be in charge of drawing the map of the thirteen colonies and, as clues about a specific colony are uncovered, will note them in the appropriate space on the map. For example, students might discover that indigo is grown in South Carolina, and that it is offered for sale. The Location Manager would then write "Indigo can be purchased here." on the map.

NOTE TAKER: This student will take notes on events that take place, team decisions that are made, and information that is not specifically related to the colonies (which is the area of speciality of the Location Manager). He or she will decide which information is important to record. For example, students might discover that indigo was first successfully grown in South Carolina by Elizabeth Lucas. The Note Taker would ask the team, "Do we think this fact seems important?" If the answer is yes, the Note Taker would then write "Indigo was first grown in South Carolina by Elizabeth Lucas." The Note Taker will also keep a record of unsuccessful, and/or ineffective decisions the team has made so that they can be avoided in the future.

METHOD MANAGER: This student will decide upon the problem-solving methods to be used and steps to be taken to reach the team's goal: to find the missing delegate. The Method Manager will have to work closely with every other student on the team to gather all the information the group has assembled.

The Method Manager will be responsible for analyzing and evaluating clues and other information the team has gathered to formulate a strategy on which the team may proceed.

PROGRESS MONITOR: This student will evaluate the progress the team has made toward reaching its goal of solving the Twistaplot. He or she will remind the members of their goals, especially if they are not moving successfully in that direction.

FINANCIAL ADVISOR: This student will keep track of all money spent and will record the cost of items for sale in each colony. He or she will recommend the purchase of an item by analyzing the team's finances and the value of the information to be gotten by bartering the item.

Students should *analyze* clues and *make inferences* based on the information they have gathered, and then determine the whereabouts of the missing delegate.

Teacher Tips:

- Encourage students to view themselves in their roles as specialists working with other specialists. Advise each student to make recommendations in his or her specific area of expertise, from which the team can make decisions.
- If your students are having difficulty assuming their roles and making progress playing the Twistaplot, join the team in the role of Team Leader. Play the Twistaplot with your students and when students have to make decisions, prompt them by pointing out choices they might make. As you uncover important facts, ask the team, "Is this something we should remember? Which team member should be responsible for this fact?" Continue in your role as Team Leader until students begin to recognize for themselves decision points and important facts.

Lesson 2: Use With Students After They Play "The Race for Independence"

Teacher Instructions:

The objective of this activity is to allow students to reflect on the importance and value of the roles they played while reading this Twistaplot. After students have finished playing "The Race for Independence," have them "attend a conference" with other students who held the same roles. For example, put all Location Managers in one group, all Method Managers in another, etc. Encourage students to continue their role-playing and view themselves as professionals, sharing their work experiences with other professionals.

To get them started, ask the groups to discuss the following questions:

- Why was your job important to the success of the group?
- What skills were important in your job?
- What did you like about your job? Why did you like it?
- What didn't you like about your job? Why didn't you like it?
- What job would you like to have the next time you play a Twistaplot? Why?

Using these questions as a guide, have each group write an outline for a presentation about their role. Encourage all the groups to present their roles as if they were talking to others considering a career as a Note Taker, Progress Monitor, etc.

Teacher Tip:

- If your students are more advanced, have each student expand the outline his or her group prepares into a persuasive essay convincing others to take or not take a job as a Note Taker, Location Manager, etc.

Activity: Use With Students After They Play "The Race for Independence"

Teacher Instructions:

Use the attached black line master (page 32) to help students reflect on the importance of their roles within the Twistaplot team.

Hints on Playing "The Race for Independence"

Version 1: BUY ring in RI and GIVE it in SC. BUY candlestick in NY and GIVE it in VA. Delegate John Witherspoon is in MA. The answers to Captain Halsey's questions are NJ, SC, and RICHARD HENRY LEE.

Version 2: BUY tobacco in VA and GIVE it in RI. BUY tar in NC and GIVE it in NY. Delegate Button Gwinnett is in VA. The answers to Hiram's questions are GA, RI, and NY.

Version 3: BUY indigo in SC and GIVE it in MA. BUY lace in NH and GIVE it in MD. Delegate William Williams is in DE. The answers to Mr. Freeman's questions are CT, MA, and MASON and DIXON.

Version 4: BUY oil in MA and GIVE it in NC. BUY leather in MD and GIVE it in NH. Delegate Caesar Rodney is in NY. The answers to Nathan's questions are DE, NC, and NH.

THE CASE OF THE MISSING ROLE

In all stories, each character or role is important. Try to imagine the story of Goldie Locks and the Three Bears without the baby bear. There would be no small chair, porridge, or bed that was just right for Goldie Locks. She might have left the house before the bears returned!

Now think about the role you played in "The Race for Independence." Write a paragraph explaining what might have happened if you had not been not there to play your role on the team. If you need more space, use the back of this page.

I performed the role of the _____.

If I had not performed my role on the team, _____

_____

_____

_____

_____

_____

_____

_____

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NUTRITION EXPLORER

A Science Simulation

What Makes Food Good for Me?

DIFFICULTY LEVEL: Challenging, **Average**, Easy

VOCABULARY PREVIEW: carbohydrate, protein, fat, ideal

LEARNING OBJECTIVE: Students will be able to apply their reading, research, and graph-reading skills to increase their knowledge of nutrition.

In "Nutrition Explorer," students can evaluate the nutritional value of a meal by choosing foods from a data base of foods. The program then automatically calculates the total number of calories in the meal, and what fraction of the calories respectively comes from carbohydrates, fats, and proteins. This information is presented in a bar graph that compares the data with the ideal fraction of these nutrients needed for a balanced diet. The objective is for students to evaluate the nutritional value of the foods they eat to determine whether or not they are making healthy food choices for themselves.

Lesson 1: A Warm-up Activity

Teacher Instructions:
This program is a great tool to use when teaching the nutrition unit of your Science/Health curriculum. Remind students that nutrition (eating a balanced diet) is important because good nutrition contributes to good health. Review the concept that a good diet includes eating foods with the right balance of carbohydrates, proteins, and fats.

To review the function of carbohydrates, proteins, and fats in foods, have students write the following terms on a piece of paper:

Nutrition
Nutrient
Diet
Menu
Calorie
Carbohydrate
Fat
Protein

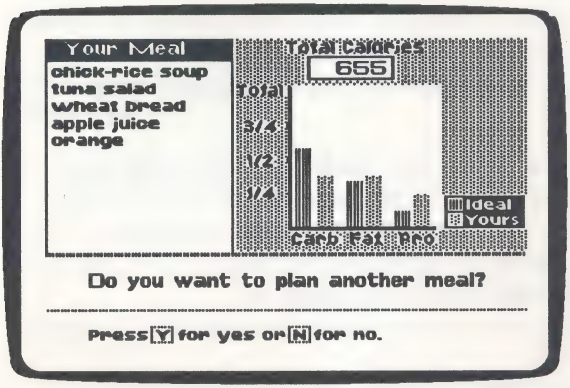
Ask students to write a definition for each term. Encourage your students to do research to verify their definitions or to gather information if they do not know the meaning of a word. For example, have them look for these terms in the index and/or table of contents of their science text book, or other science reference book. For each term, have them read the textbook explanation and write down a definition. Then tell students to compare their original definitions with what they wrote after reading about the term. Remind students not to be discouraged if they didn't know or remember many of the terms correctly. The important thing is that they now know them!

Teacher Tips:

- Remind students that they are researching material they've already learned, and are now using their textbooks as reference books to refresh their memories.
- If your students are not very familiar with the material in a unit on nutrition, to help them get started, suggest that students read the Introduction and Help sections in "Nutrition Explorer" before completing this lesson.

Lesson 2: Use With Students Before and While Using "Nutrition Explorer"

Teacher Instructions:
Use the attached black line master (page 37) to reinforce students' understanding of how to plan a balanced diet. Students will have the opportunity to analyze three meals they've eaten, evaluate the nutritional value of the meals, and then, based on what they learn, modify their food choices to create more nutritionally balanced meals.



Review with your students how to read the bar graph in "Nutrition Explorer." Explain that the scale on the Y (vertical) axis represents the total calories in a meal. Explain that each of the green bars on the X (horizontal) axis tells you the three nutrients that are the source of the calories. Each of the purple/pink bars tells you what total calories in a meal would ideally come from each nutrient.

To use the black line master, have students write down what they ate for each meal the previous day. Then have students input the foods in their meals using "Nutrition Explorer." Have your students record whether the amounts of carbohydrates, proteins, and fats in their meals were less than, equal to, or more than the ideal amounts.

Depending on the results, have students analyze their meals compared to the ideal. Then tell them to plan a new meal in which the balance of nutrients would be closer to the ideal. Encourage your students to predict which foods they should eliminate and which new foods to add to come closer to the ideal, and to use the strategy of trial and error to plan a new meal.

Teacher Tips:

- Some students may not remember everything they ate the day before. Thus, the day before this lesson, ask your students to write down everything they eat on that day. Begin immediately by having students write down what they ate for breakfast. Remind students throughout the day to write down what they eat for lunch and dinner.
- Some of the foods students ate may not be included in the food data base in "Nutrition Explorer." If students cannot find a food in any of the categories in the data base, encourage students to substitute equivalent foods. For example, substitute an orange for a tangerine, or turkey pot-pie for chicken casserole.

HOME ACTIVITY

When using "Nutrition Explorer," students have the opportunity to analyze the nutritional contents of the foods they eat. After using the program, ask students to choose four foods from their cupboard or refrigerator at home, and to read the labels. Ask them to note the kinds of nutritional information that are on the labels. The objective is for students to use their new awareness of what makes foods healthy to evaluate foods they eat all the time.

MEAL ANALYZER

Write down the foods you ate yesterday. Input the meals into "Nutrition Explorer." Are the foods in your meal made up of the ideal fraction of carbohydrates, fats, and proteins? For each meal, write L(less) if your meal has less than the ideal, E(equal) if your meal has the same as the ideal, and M(more) if your meal has more than the ideal.

I ATE:	Carb	Fat	Pro
Breakfast			
_____			
_____			
_____	_____	_____	_____
Lunch			
_____			
_____			
_____	_____	_____	_____
Dinner			
_____			
_____			
_____	_____	_____	_____

How did you do? Did your meal have less than, equal to, or more than the ideal fraction of carbohydrates, fats, and proteins? _____

_____

_____

What can you change in order to eat a more balanced meal?_____

_____

_____

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Fractions in Everyday Life

DIFFICULTY LEVEL: **Challenging**, Average, Easy

VOCABULARY PREVIEW: numerator, denominator, equivalent

LEARNING OBJECTIVE: Students will be able to identify fractions in real-life settings, and apply prior knowledge.

In Math Mall, students will complete problems using fractions and decimals. After students input a fraction, the computer will do most of the time-consuming calculations, leaving students free to focus on analyzing the problem itself. In the process, they will evaluate the progress they have made, practice important estimating skills, as well as experience the "real life" application of computing fractions and decimals.

Lesson 1: A Warm-up Activity

Teacher Instructions:
To review the concept of fractions with your class, discuss foods students eat that are portions of a whole (for example, a slice of bread, or a slice of pizza). Ask students to name *the whole* and *the portion* (for example, loaf of bread/slice of bread; pizza pie/slice of pizza). Talk about the fact that these portions of a whole can be called *fractions of a whole*.

Now focus the discussion on things students ate for breakfast or lunch that day. They may have eaten half a sandwich, and traded the other half for a piece of cake (which is a fraction of a whole cake), or drank a fraction of the milk in a container. On the blackboard or overhead projector, make a list of students' responses, noting each student's name next to his or her response.

For each item listed, draw (or have students draw) a picture of the *whole* item. Have students verbally estimate what *piece*, or *fraction* of the whole they ate, traded, left over, etc. Then call on one student to draw lines within the picture to graphically delineate that fraction. If the student has said, for example, "I ate half a sandwich," before he or she draws the line indicating half, be sure to repeat "please draw a line or lines through the picture of the sandwich that will show us what *half* of that *whole* sandwich looks like."

Teacher Tips:

- Once your students are comfortable with the verbal and graphic representation of fractions, take this activity one step further by having students write the numeric equivalent of the fraction that was drawn.
- To make this activity more vivid for students, instead of drawing the food students ate on the blackboard, bring to class a knife, and a sandwich, a cake, and an orange (or other foods your students are likely to have eaten). Have students point to the fraction of the whole they ate, and then use the knife (you'll probably want to do this yourself!) to cut a piece that represents that fraction.

Lesson 2: A Warm-up Activity

Teacher Instructions:
Encourage students to look at the environment around them and to apply their skill in estimating fractions. Tell your students that together you and they make up a *whole class*. Discuss how individually or in groups, *you each represent an equal part or fraction of the whole class*. Ask students, "How many parts, or people, make up our class today?" (One teacher, plus X number of students.) Write the number on the blackboard. Draw a line over the number to indicate that it is the denominator. Ask your students, "What number shall I put in the numerator if I want to indicate the part of the whole class each one of us represents?" The answer is 1/X (X = the number of people in class that day).

Begin by looking around your classroom and asking students to estimate what fraction of the students in your class are boys, are wearing blue shirts, or are using spiral notebooks. List the category of person on the board (for example, boys, people wearing blue shirts, people using spiral notebooks). Ask students, "If we want to describe what fraction of the whole class is boys, what would the denominator of the fraction be?" The answer is the number of people that make up your class that day. Explain to students that when determining any fraction of your class, the denominator will always be the number that represents all the people in the class today. In contrast, the numerator will be the number of people who fit into the category you're estimating (for example, those who are boys, wearing blue shirts, using spiral notebooks).

Suggest other fractions of your class for students to estimate. For example, ask students, "What fraction of the class is wearing glasses?" "What fraction of the class is girls?" "What fraction of the class is wearing skirts?" "What fraction of the class is right handed, has blue eyes, has both hands on the desk, wears braces, has notebooks covered with stickers, and wears watches?"

Without allowing students time to count, quickly elicit responses and write several of the responses as fractions on the blackboard next to the concern in question. Reinforce the fact that the objective is to quickly estimate the *approximate* number, not to take the time to calculate the *exact* number.

Now check how close the students come to estimating the correct numbers by having the students count the number of students who are wearing glasses, wearing blue shirts, using spiral notebooks, etc. Express each number as a fraction of the whole class and compare students' estimates with these final numbers.

Talk to students about how estimating can be useful in general and in particular when using "Math Mall." Point out that they will have the most success if they can estimate their answers quickly when using "Math Mall."

Teacher Tip:

- If your students need more practice estimating fractions, once they are comfortable working with fractions of the class, find other "wholes" in your classroom and have students estimate fractions of them. For example, given the number of crayons that make up a whole box, have students estimate what fraction of the crayons are broken. Or, given a pencil, what fraction of the whole pencil remains after it has been used and sharpened once, twice, ten times, etc.

HOME ACTIVITY

To practice their ability to estimate fractions, tell students to look at the environment around them while at home, at the shopping mall, or at the supermarket, and to estimate *fractions of the whole* they see there. For example, students can estimate what fraction of the boxes in a cabinet have breakfast foods in them, or what fraction of the checkout counters at the supermarket are open. Encourage students to view this activity as a fun game, and to play this game all the time. Teach them to self-check by suggesting they keep a score card of the estimated fraction and the actual calculated fraction.

THE CASE OF THE CUTTING CAPER

A Monitor Mystery

The Mystery of Mysteries

DIFFICULTY LEVEL: Challenging, Average, **Easy**

VOCABULARY PREVIEW: confess, metal detector, stammer

LEARNING OBJECTIVE: Students will be able to apply critical inquiry skills in order to solve a mystery.

Lesson: A Warm-up Activity

Teacher Instructions:
When solving a Monitor Mystery, students must read for detail, evaluate clues found in a picture of the scene of the crime, and make inferences based on what they've read and seen in the picture. They must then answer questions that will lead them to solve the mystery. By playing the game of "20 Questions," students will have the opportunity to practice the skills of inquiry that will help them to successfully complete "The Case of the Cutting Caper."

Begin by thinking of a famous person or thing. Tell your students they may ask you 20 yes/no questions until they guess who or what you are thinking of.

As you play the game, write students' questions and your answers on the blackboard or overhead projector. After each question is asked and answered, discuss with students what they've learned, and what they may infer from what they've learned. Encourage students to use the inquiry process and to focus on the process of elimination. For example, if you're asking students to name a person, they should first find out if the person is male or female, then living or dead, etc.

Suppose the first question asked is, "Is the person male?" and the answer is yes, ask students what else they now know about the person. They know the person isn't female. If the next question is, "Is the person alive?" and the answer is no, students now know the person is dead, and they can infer that the person isn't a class member, or someone else in your school, etc.

Continue playing this game until your students are comfortable with the questioning process.

Teacher Tips

- Before students begin asking questions, remind them that they may only ask a limited number of questions.
- If your students have difficulty understanding the questioning process, limit the universe from which students must guess. For example, tell students "I'm thinking of a thing in our classroom," or "I'm thinking of a person we all know."

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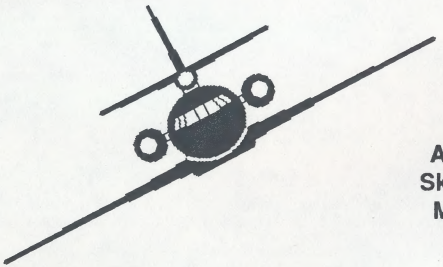
Monitor Mystery

Detective Diploma



Has Solved

The Case of the Cutting Caper

And Has Hereby Demonstrated All The Skills Necessary To Become An Official Microzine Monitor Mystery Detective.

Detective Ed Minkley

MM

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